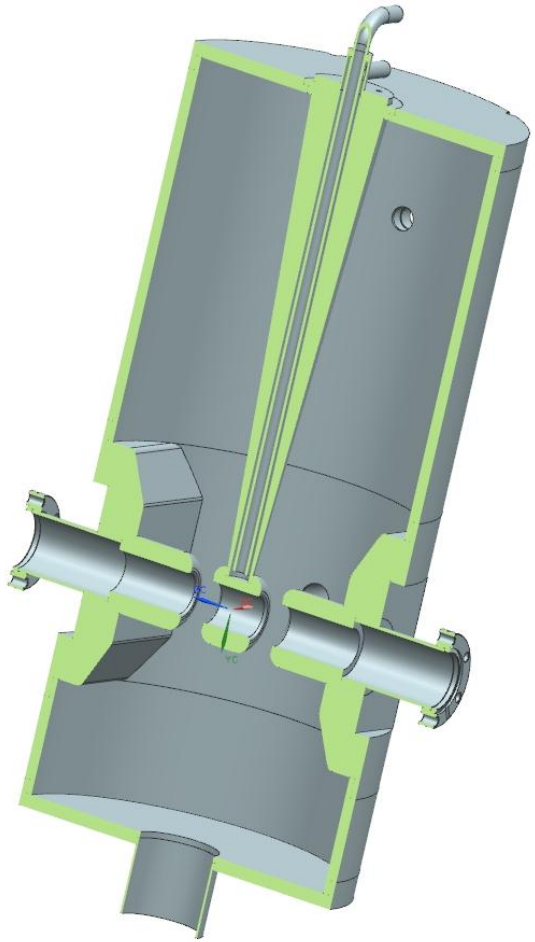
Changes from the last meeting

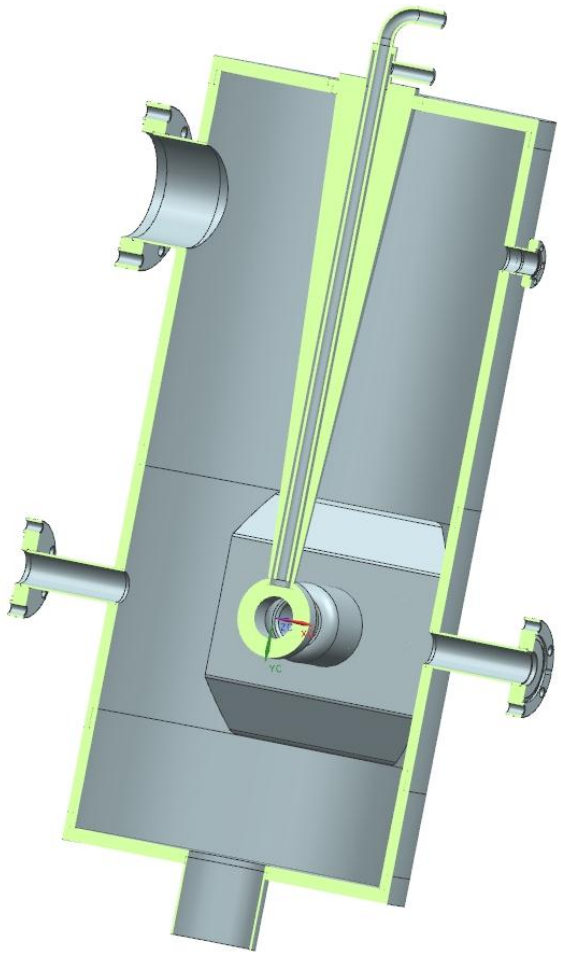
- Split cylinder and brazed together
- Brazed joints design
- Conical spoke
- Inside cooling configuration
- Drift tube diameter reduced to 30mm
- Possible to use bellows in beamline
- Total height is increased form 529 mm to 534.9 mm

Latest model of buncher

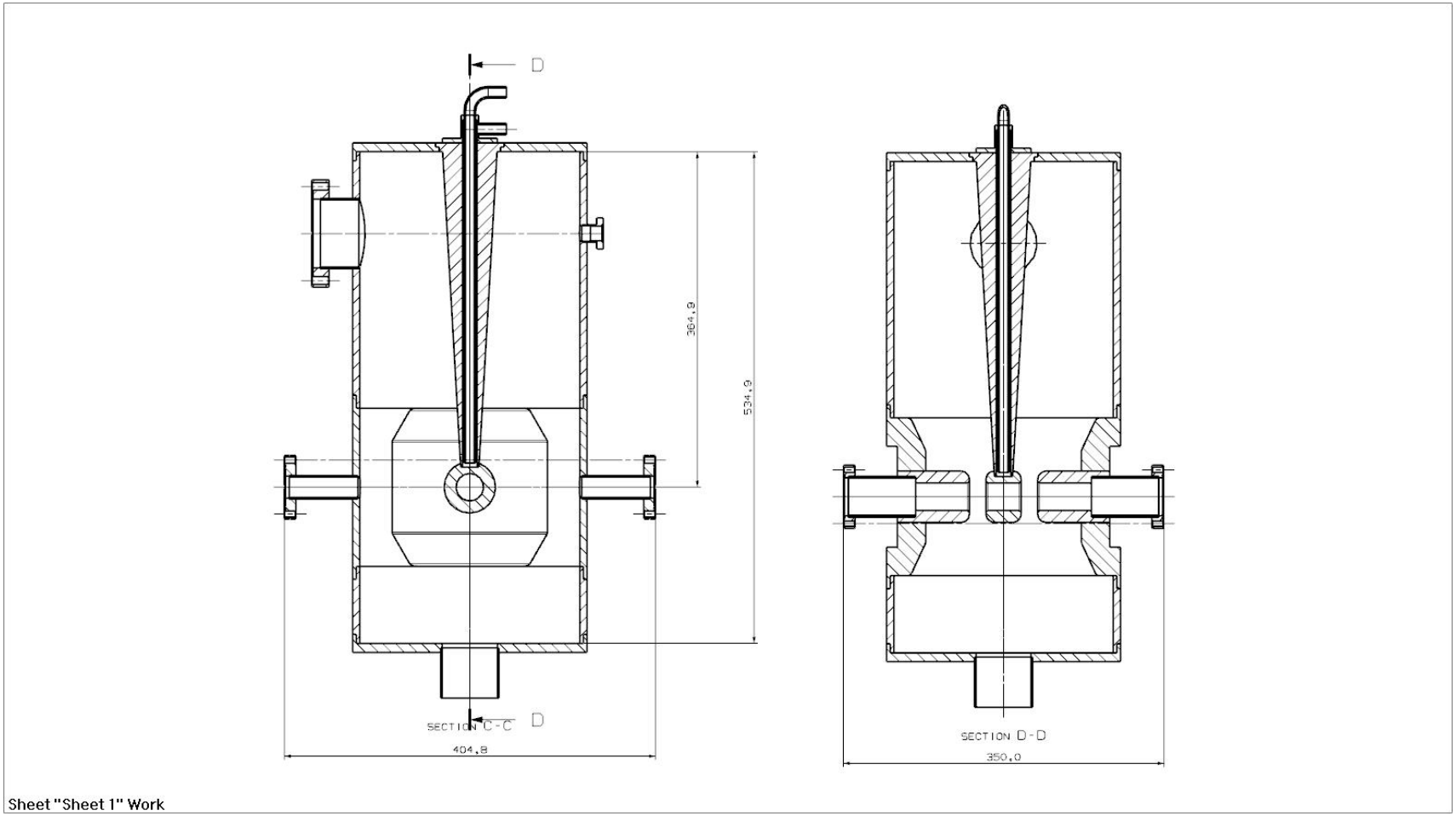
Cross-section in Y-Z plane



Cross-section in X-Y plane

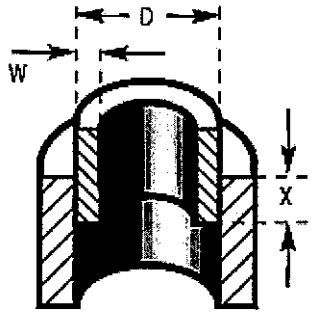


Brazed joints



Lap joint length

- $X = \frac{W(D-W)T}{CLD}$

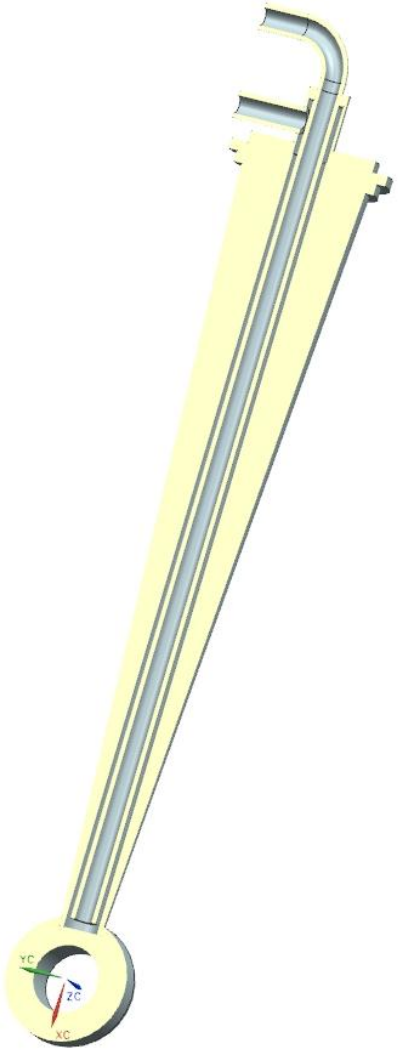


- X = Length of lap area
- W = Wall thickness of weakest member
- D = Diameter of lap area
- T = Tensile strength of weakest member
- C = Joint integrity factor of
- L = Shear strength of brazed filler metal

Joint length calculations

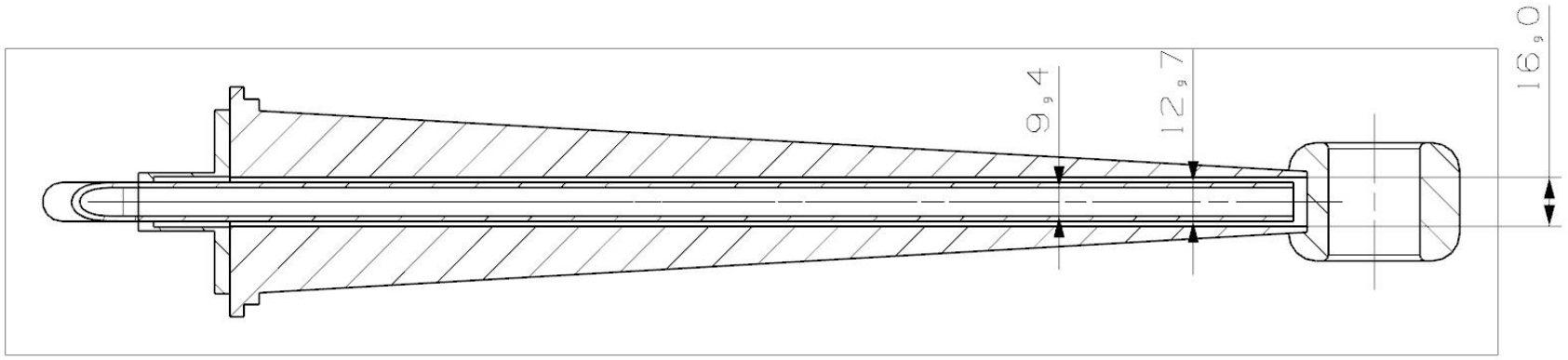
Table 5.1.1 - Brazed lap length							
Joint Area	**W (mm)**	**D (mm)**	**T (ksi)**	**C**	**L (ksi)**	**X req'd (mm)**	**X actual (mm)**
drift tube/cylinder	13	56	28	0.8	30	11.65	31
beamline/drift tube	5.8	44.4	28	0.8	30	5.88	20
Top plate/cylinder	4	247.9	28	0.8	30	4.59	10
Between cylinders	4	247.9	28	0.8	30	4.59	14

Spoke and inside cooling



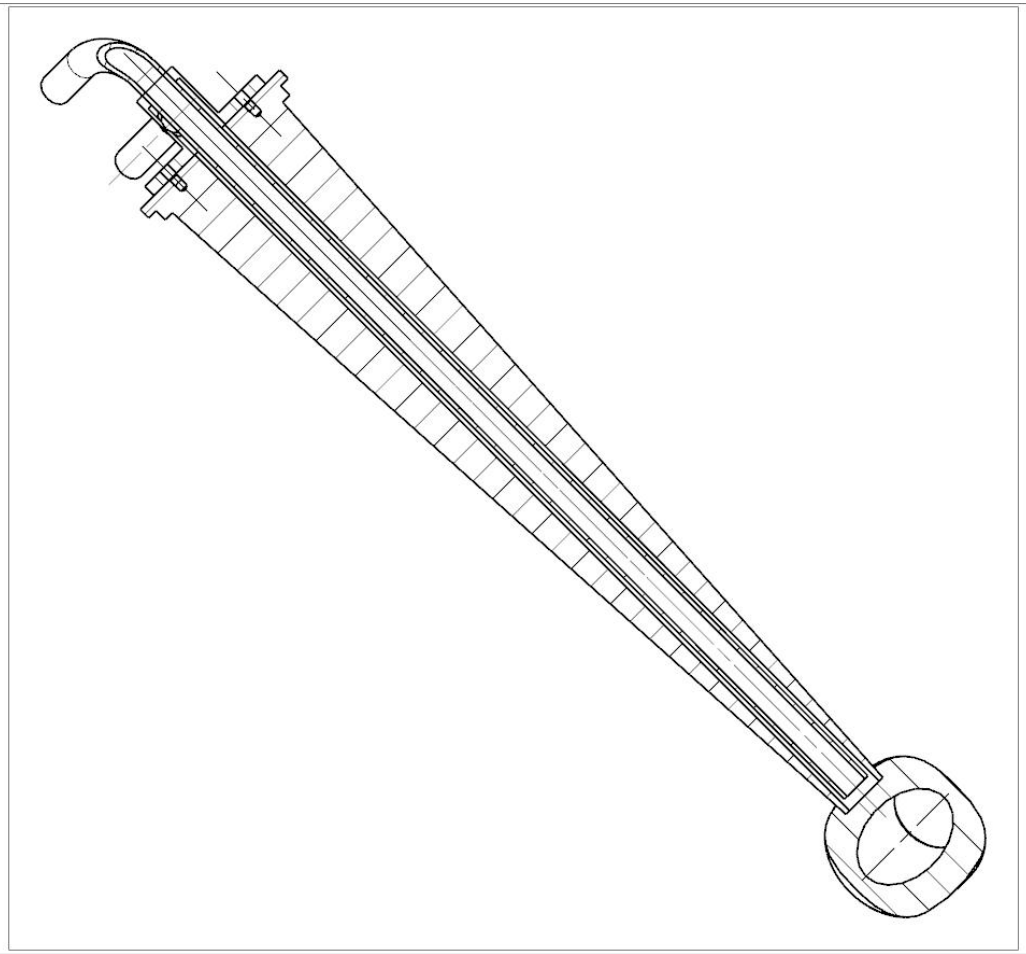
Details of inside cooling

Water flow area:
Inside tube = 69 mm2
Outside tube = 74 mm2



SECTION A - A

Sheet "Sheet 1" Work (Out of Date)



Sheet "Sheet 1" Work (Out of Date)

Table 4.3.1 - Cooling tube parameters							
Tube	**P (psi)**	**D (in)**	**S (psi)**	**E**	**t req'd (in)**	**t actual (in)**	**Safety factor**
Outside cooling	290	0.375	4,500	0.8	0.01463	0.065	4.44
Inside cooling	290	0.5	4,500	0.8	0.01951	0.065	3.33
reinforce tube	290	0.75	16700	0.8	0.00807	0.049	6.07